Your Cloud in the Public Sector

INDUSTRY BRIEF WHITE PAPER
Executive Summary

The public sector is adopting enterprise hybrid cloud across governmental and educational institutions with the goal of improving the quality of public services, reducing costs, and increasing responsiveness to risk. This industry brief outlines the common hybrid cloud use cases that are yielding significant benefits for public sector organizations and provides a real-world example that illustrates how agencies are adopting cloud computing to achieve business agility.

Introduction

Governmental organizations and educational institutions must stretch limited budgets to meet their constituents’ increasing demands and comply with new mandates. Less funding is available from traditional sources in a soft economy, and public sector entities must devise ways of delivering services more efficiently. At the same time, technology-savvy constituents are now demanding a higher level of interaction—such as instant access to information and services online and via mobile devices. While addressing these challenges, many public sector organizations are also struggling to meet new directives about how they manage IT and cut costs.

Public sector IT leaders have been responding by upgrading legacy systems and modernizing their infrastructure, but public sector IT continues to be strained. As a result, forward-thinking organizations in the public sector are deploying cloud computing. This new approach to delivering information and services will eventually transform how the entire organization—not just IT—operates. These organizations are choosing among different cloud-deployment models to meet the unique challenges they face today and increase their business agility.

What is Business Agility for Public Sector?

According to McKinsey & Company, the leading global management-consulting firm, business agility is the ability of an organization to adapt rapidly and cost-efficiently to changes in its environment. For the public sector, business agility translates into organizational agility in three key areas: higher quality services delivery, greater and more-sustained cost reduction, and more-effective management of risks and reputational threats (see Figure 1).

Figure 1. Based on McKinsey & Company’s Business Agility Framework.
Quality Public Services Delivery

Constituents — accustomed to high-quality, high-speed, multi-channel services in the private sector — are raising the bar for public sector organizations. In order to meet increasingly sophisticated needs, government entities must roll out new services (including online transactions for drivers’ licenses, taxes, marriage licenses, and others) more rapidly than before. Learning institutions face increased competition for students and faculty and must deliver services (including online registration and enrollment) that allow for a quality, world-class educational experience. The public sector must also make each touch point a positive experience and ensure a high quality and secure interaction. Delivering services at this level, with the backdrop of changes in policy and citizen demographics, is a huge challenge.

Agile public sector organizations are able to deliver high-quality public services. They can identify and quickly deliver relevant citizen services, improve citizen engagement and experience with their institutions, and rapidly adapt to new policies and changing demographics.

Risk and Reputation Responsiveness

Protecting the well-being of constituents is the foremost objective of governmental organizations and educational institutions. To deliver on this considerable responsibility, these organizations and schools must be able to respond quickly to risk. Constituents must also have confidence that they can depend on the public sector in everyday encounters as well as in times of crisis. For government, the ability to serve citizens securely on a daily basis by providing reliable and readily available mission-critical services — such as those for police, ambulance, and fire — is imperative. A positive reputation is key to providing this assurance. In rare situations — such as when natural disasters, health epidemics, and security threats occur — crises must be addressed swiftly and deliberately to protect constituents and maintain confidence in Government and Education at all levels.

Agile organizations have a high degree of risk-and-reputation responsiveness. They can anticipate and quickly adapt to new external constraints or operating requirements (such as dynamic changes in policy and budgets, which can happen as a matter of course). They can also mitigate the impact of unexpected or unlikely negative events (for example, by supporting constituents in times of crisis).

Cost Reduction

Intense cost-management pressures result from the increasing demand for services as budgets shrink. While citizens draw social-services benefits at high rates, they also seek financial support from government agencies for education to retrain for new-economy jobs. Because of changing demographics, agencies in some regions struggle with offering the right services to cater to a disproportionately young or aging citizenry. The entire public sector must contend with limited budgets caused by reductions in revenue from taxes and other sources.

Agile organizations have a superior ability to reduce costs. They continuously identify and capture operating improvements in organizational processes, accelerate operational execution of projects and keep costs in line as services demand grows. Agile organizations do much more with less—an imperative for the public sector in the current environment.

"Increasingly, governments are able to leverage the benefits of hybrid cloud to be more responsive, more cost effective, and offer improved service delivery to citizens."
— Colleen McMillan, Director of Global Public Sector Solutions and Market Development, VMware
Public Sector and Hybrid Cloud Computing

Government at every level—federal, state and local—is looking to cloud computing to increase business agility. Cloud computing provides a dynamic, secure and compliant solution that dramatically reduces IT services-delivery time. Organizations can start with the public, private or hybrid cloud deployment model(s) that helps them best meet their specific requirements. However, the greatest benefits and IT cost efficiencies can be attained with a hybrid cloud. Table 1 shows some of the most common hybrid cloud use cases for government.

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<th><strong>GOVERNMENT CHALLENGE</strong></th>
<th><strong>BUSINESS AGILITY IMPACT</strong></th>
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| **Providing Access for Citizens Across Devices**  
While governments need to maintain infrastructure and legacy IT investments, they also face the challenge of responding to changing citizen demands for interactive access to services on any end-user device. | Infrastructure as a service (IaaS) and platform as a service (PaaS) enable the extension of platforms so that government IT can respond proactively and reactively to increased demand for services at lower cost. (Sometimes agencies start by separating test and development from production environments to improve SLAs and ensure online applications’ uptime during peak traffic periods.) |
| **Eliminating System Failures During Tax Season**  
Government agencies have seasonal taxation requirements. Infrastructure capacity is scaled to meet peak demand during the tax season. Ensuring that this substantial data is protected from any infrastructure failures is of paramount importance. | Using cloud for on-demand scaling and data redundancy allows for better management and responsiveness. It is also allowing agencies to reduce costs by limiting the in-house footprint for Web services, such as those related to tax filings. |
| **Managing Peak Demands Without Overprovisioning**  
Computing resources set up by individual agencies are typically provisioned to handle peak-demand loads and are overprovisioned during nonpeak times. As a result, servers are not fully utilized. | A cloud infrastructure eliminates overprovisioning while reducing costs through automated provisioning onsite, or by allowing multiple agencies to share the infrastructure as a hybrid cloud environment. Workload types could include research computing, financial management, reporting and analysis. |
| **Cutting Across Organizational Silos for Better Data Sharing**  
Because datacenters set up by various agencies are siloed, they prevent sharing of services and data among all agency and public users. Individual datacenters also often rely on different analytics and management technologies, which lead to high cumulative costs. | Multisourced services extend services that previously existed only in private datacenters to cloud computing. Agencies enjoy cost savings that result from standardized data and management. They also benefit from streamlined processes that allow for broader access to and integration of data and services. For example, such services can be used to track epidemic data, national disasters or security risks across multiple regions. |
| **Supporting Emergency Responsiveness**  
Emergency-management agencies must quickly provision resources to support emergency-response activities. | With on-demand scaling, agencies can use cloud computing to provision quickly a standard set of emergency-response services. This enables them to support applications at a significantly lower cost while responding more quickly to risk and crisis. |

Table 1: Hybrid Cloud Use Case Examples for Government
Real World Customer Example

Cloud computing allows national food inspection agency to rapidly respond to risk, ensuring food safety.

Food production and distribution infrastructure is more complex than ever, and ensuring food safety is a growing challenge for government food-inspection agencies. The ability to respond rapidly to a food-contamination crisis or any other public food-safety risk is critical and can save lives.

This national food inspection agency, like many similar agencies, faced key regulatory challenges in food production and distribution:

- Monitoring livestock, produce and processed food items from source to supermarket
- Maintenance of records to trace individual items, if necessary, to pinpoint the source of issues such as food-borne pathogens or contaminants
- Tracking the import and export of food items, which requires coordinating efforts with other governmental agencies and companies both inside and outside the nation’s borders

At the same time that the agency was seeking to meet the growing demand for improvements to food-safety processes, it needed to streamline its own processes and more effectively manage its budget.

VMware cloud solutions provided the foundation for the agency to better respond to risk and improve cost control.

Improved Risk Responsiveness

Better tracking and record maintenance allow the national food inspection agency to respond more quickly in times of crisis, when the health and well-being of citizens are at stake. To achieve better tracking of food items, IT needed to reduce the time to market of applications that track compliance verification, analyze animal health risk and track export certifications. VMware cloud solutions enabled this through automated provisioning and developer self-service provisioning of IT resources in the organization’s test-and-development environment.

To maintain records to trace individual sources of food-borne pathogens and contaminants, the organization sought to integrate with governmental agencies in other nations, as well as the country’s border services. With VMware cloud solutions, shared IT resources were implemented across systems with strict security.

Enhanced IT Cost Reduction

Improved IT cost reduction would let the national food inspection agency operate more effectively within its limited budget. To better leverage government funds and meet the growing demand for improvements to food-safety processes, IT sought to provide cost transparency for improved capacity-demand planning. VMware cloud solutions provided metering of and granular reporting on IT resource usage, reducing the need for capital expenditures on potentially unused servers. To offer a cost-effective infrastructure and operational stability, VMware cloud solutions used replicas of the agency’s production systems for application testing without causing production-system downtime (an issue in the past for this organization). To further aid in cost containment through the management of operating expenses, the move to cloud computing eliminated manual processes and allowed for developer self-service provisioning.

Virtualization served as the foundation for moving the national food inspection agency quickly to cloud computing. The issues this agency faced are common in many agencies around the world.
Primary-, secondary- and higher-education organizations also benefit from the business agility that cloud delivers. Educational organizations can start with the public, private or hybrid cloud deployment model(s) that helps them best meet their specific requirements. However, the greatest benefits and IT cost efficiencies can be attained with a hybrid cloud. Table 2 shows examples of the most common hybrid cloud use cases for education.

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<th>EDUCATION CHALLENGE</th>
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<td>Managing High Demand During Student Registration</td>
<td>Spikes in demand at registration time and at the end of the school term hit mission-critical systems. System downtime can prevent students from registering. Students want access to key systems on demand and on any device, not just online.</td>
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<td>Streamlining School Application Processes</td>
<td>Schools must streamline the end-to-end college-application process to integrate data—grant and financial information, tax records, previous college transcripts, citizen status and birth records—from different systems.</td>
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Table 2. Hybrid Cloud Use Case Examples for Higher Education

Why VMware for Your Cloud

VMware cloud solutions enable government and education IT departments to transform into efficient, flexible entities that can respond faster to the needs of policy makers, agencies and constituents while reducing infrastructure and operating costs. If your organization is thinking about building for the cloud, why not build for your cloud? Although true cloud computing is a standardized approach, the way every individual organization approaches cloud computing is not. VMware is here to help you move beyond the limitations of a one-cloud-fits-all approach.

The way you approach cloud computing will depend on your objectives. Do you want to begin with an internal private cloud? Do you want to leverage public cloud services? Do you want a combination?

In other words, it is not about the cloud, it is about your cloud. VMware’s unrivaled experience, large customer base and partner ecosystem can help you move beyond current IT limitations, to your cloud—where you can accelerate IT which, in turn accelerates meaningful results for your organization.

Your Cloud.

Accelerate IT. Accelerate Your Business.

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